

REMARKS

Favorable consideration of this application is respectfully requested.

Claims 1-8 and 12-46 are currently active in this case. Claims 9-11 has been cancelled; Claims 12 and 28 has been amended and Claims 32-46 have been added by way of the present amendment. Each new and amended claim is supported by the specification and claims as originally submitted and no new matter has been added.

In the outstanding Official Action, Claims 1, 4, and 5 were rejected under 35 U.S.C. §102(b) over *Shimizu* (U.S. Patent No.: 6,515,801); Claims 9-17, 22-25, and 28-31 were rejected under 35 U.S.C. §102(e) over *Miyagaki et al.* (U.S. Patent Application Publication No. 2003/0222980A1, hereinafter *Miyagaki*); and Claims 6-8 were rejected under 35 U.S.C. §103(a) over *Miyagaki*.

Applicant appreciatively acknowledges the Examiner's identification of allowable subject matter in Claims 2, 3, 18-21, 26, and 27.

Applicants appreciatively acknowledge the courtesy of an interview granted by Examiner Tra on February 28, 2005, in which the differences between the claims and the cited references were discussed.

**1. A device comprising:
a light modulator; and
a lens array configured to focus light on high contrast
portions of the light modulator.**

However, *Shimizu* fails to teach or suggest similar subject matter.

Applicant respectfully traverses the assertion in the outstanding Office Action that states *Shimizu* discloses ... *"a lens array (item 452, Fig. 2) configured to focus light on high contrast portions of a light modulator."* As a preliminary matter, Applicant respectfully notes that item 452 in *Shimizu* is *"a projection lens 452 oriented to pass linearly polarized light of the light-pixel polarization state to improve the light-to-dark contrast ratio"* (*Shimizu*, col. 18, lines 42-44). However, a projection lens is different than a lens array and Claim 1 specifically claims a lens array.

More importantly, Applicant respectfully notes that *Shimizu's* projection lens fails to focus light on high contrast portions of a light modulator. In fact, *Shimizu's* projection lens focuses light on a display screen 456 (*Shimizu*, col. 18, lines 45-49).

Therefore, Claim 1 cannot be anticipated by *Shimizu* because Claim 1 fails to teach subject matter specifically claimed in Claim 1. Accordingly, Applicant respectfully submits that Claim 1 is patentable over *Shimizu*.

Applicant respectfully traverses the rejection of Claim 12, under 35 U.S.C. 102(e) as being anticipated by *Miyagaki*. Claim 12 recites:

12. (Amended) A kernel comprising:

a prism assembly comprising a set of processing modulating faces and a set of optical components configured to separate light from the light source into a set of component light beams and individually direct each component light beam to one of the processing modulating faces;

a reflective microdisplay mounted on one of the processing modulating faces; and

a lens array configured to focus beams of light individually on individual high contrast portions of the microdisplay.

However, *Miyagaki* fails to teach or suggest similar subject matter.

Applicant respectfully traverses the assertion in the outstanding Office Action that equates *Miyagaki's* "prism assembly" 85 (*Miyagaki's* Fig. 23) to the claimed prism assembly "comprising a set of modulating faces ...". In fact, *Miyagaki's* "prism assembly" 85 only has a single processing face (adjacent to *Miyagaki's* liquid crystal light valve, or LCD 84).

Regarding the prism configuration, Applicant respectfully traverses the assertion that equates *Miyagaki's* single light beam modulated by a single light valve (LCD 84) to Applicant's claimed prism of optical components that "... separate light from the light source into a set of component light beams." In *Miyagaki*, Fig. 23, although the light beam is directed by various optical components and reflected by LCD 84, *Miyagaki* still only shows a single light beam.

Further, the claimed optical components "individually direct each component light beams to one of the processing faces." However, *Miyagaki* does not individually direct component light beams, instead, *Miyagaki* directs a single light beam to a single processing face.

Most importantly, Applicant respectfully traverses any assertion that equates *Miyagaki's* use of microlenses (e.g., Fig. 15, microlens 45) and liquid crystal layer 42 to Applicant's "a lens array configured to focus beams of light individually on individual high contrast portions of the microdisplay." In fact, *Miyagaki's* microlenses (e.g., microlens 45) and apertures 43 direct light to the liquid crystal

layer 42 or in the vicinity of the liquid crystal layer 42 (*Miyagaki*, paragraph 0285, last sentence). However, illuminating a liquid crystal layer, even in conjunction with microlenses and apertures does not teach or suggest focusing light on high contrast portions of the microdisplay.

While *Miyagaki* illuminates a liquid crystal layer, nothing in *Miyagaki* suggests that the illumination should be focused on high contrast portions of the liquid crystal layer. Instead, *Miyagaki's* illumination is on the liquid crystal layer as a whole within the aperture. Any interpretation of *Miyagaki's* aperture as being a high contrast portion of the microdisplay would be improper because *Miyagaki* only identifies the aperture as containing the liquid crystal layer 42 and makes no distinction that would make any portion of the liquid crystal layer any different in terms of contrast compared to any other portion of the liquid crystal layer. However, to the contrary, Applicant's claimed invention specifically recites that the lens array focuses light "... individually on individual high contrast portions of the microdisplay."

Further, Applicant respectfully notes that *Miyagaki* is rife with technical inconsistencies and grammatical problems that obscure the full meaning of the patent application. Nevertheless, it appears that the entire purpose of *Miyagaki's* apertures and lenses of Fig. 15 is to produce a pixel reduction optical system (*Miyagaki*, paragraph 0284). The reduced pixels then are apparently "wobbled" (*Miyagaki*, paragraph 0290), perhaps to fill blanks created by the reduced pixels. However, none of this suggests that the light directed by *Miyagaki's* lens array is to high contrast portions of the liquid crystal layer as opposed to any other portions of the liquid crystal layer, as, again, *Miyagaki* makes no distinction between high and low contrast portions of the microdisplay.

At best *Miyagaki's* lenses direct light to an aperture defined liquid crystal layer (e.g., liquid crystal layer 42 appears to be defined by an aperture between covered parts 44). However, again, such disclosure does not anticipate or make obvious focusing light on *"high contrast portions of the microdisplay,"* because aperture defined portions of a liquid crystal layer are not the same as *"high contrast portions of the microdisplay."*

Therefore, Claim 12 cannot be anticipated by *Miyagaki* because *Miyagaki* fails to teach or suggest subject matter specifically claimed in Claim 12. Accordingly, Applicant respectfully submits that Claim 12 is patentable over *Miyagaki*.

Applicant respectfully traverses the rejection of Claims 6, 7, and 8 under 35 U.S.C. 103(a) as being unpatentable over *Miyagaki*. Claim 6 recites:

6. A lens array, comprising a series of lenses arrayed in a rectangular pattern, wherein each lens is configured to individually correspond to a high contrast area of a light modulator.

However, *Miyagaki* fails to teach or suggest similar subject matter.

Applicant respectfully traverses the assertion in the outstanding Office Action that equates *Miyagaki's* liquid crystal layer 42 to Applicant's claimed high contrast area of a light modulator. *Miyagaki's* disclosure provides no discussion or indication that would distinguish the liquid crystal layer 42 as a high contrast area. Therefore, it can only be assumed that, in terms of contrast, *Miyagaki's* liquid crystal layer 42 is an ordinary liquid crystal layer without distinguishing high contrast areas to which the lenses correspond. However, Applicant's claimed invention requires that each lens individually correspond to a high contrast area of

a light modulator. Accordingly, Applicant respectfully submits that Claim 6 is patentable over *Miyagaki*.

Applicant also respectfully traverses the rejection of Claim 22, under 35 U.S.C. 102(e) as being anticipated by *Miyagaki*. Claim 22 recites:

22. (Original) A method comprising the steps of:
focusing individual light beams on high contrast portions of a
light modulator; and
individually modulating each of the light beams via the high
contrast portion of the light modulator upon which they are focused.

However, *Miyagaki* fails to teach or suggest similar subject matter.

As noted above, *Miyagaki*'s lens only provides light to an aperatured area of liquid crystal, and *Miyagaki* makes no distinction of the contrast areas and therefore provides no indication that the aperatured area is a high contrast area. Therefore, Applicant respectfully submits that Claim 22 cannot be anticipated by *Miyagaki* because *Miyagaki* fails to teach or suggest Applicant's claimed subject matter.

Applicant also respectfully traverses the rejection of Claim 28, under 35 U.S.C. 102(e) as being anticipated by *Miyagaki*. Claim 28 recites:

28. (Currently amended) A LCoS television, comprising:
a light source;
a projection lens;
a display screen;

a prism assembly comprising a set of processing faces and a set of optical components configured to separate light from the light source into a set of component light beams and individually direct each component light beam to one of the processing faces; and

*a LCoS microdisplay package mounted to each processing face;
wherein:*

each microdisplay package comprises a reflective LCoS microdisplay and a lens array configured to individually focus beams of light on a one-to-one basis onto high contrast portions of the microdisplay;

the prism assembly is further configured to recombine light reflected from the processing faces and output the recombined light to the projection lens; and

the projection lens is configured to project the recombined light onto the display screen.

However, *Miyagaki* fails to teach or suggest similar subject matter.

Applicant respectfully notes that *Miyagaki* fails to suggest multiple processing (or modulation) faces in a prism assembly as specifically recited in Claim 28. Further, and more importantly, Applicant's claimed lens array focuses beams of light on high contrast portions of the microdisplay. However, at best, *Miyagaki's* lens array focuses light on the entire or mixed portions of *Miyagaki's* light modulator. And, *Miyagaki* makes no distinction of portions of the light modulator that might have high contrast. Therefore, Applicant respectfully submits that Claim 28 cannot be anticipated by *Miyagaki*. Accordingly, Applicant respectfully submits that Claim 28 is patentable over *Miyagaki*.

Applicant also respectfully traverses the rejection of Claim 29, under 35 U.S.C. 102(e) as being anticipated by *Miyagaki*. Claim 29 recites:

29. (Original) A projector, comprising:
a light source;
a projection lens;
a prism assembly comprising a set of processing faces and a set of optical components configured to separate light from the light source into a set of component light and individually direct each component light beam to one of the processing faces and recombine light reflected from the processing faces and output the recombined light to the projection lens; and
a modulation package mounted on each processing face;
wherein each modulation package comprises a light modulator and a lens array configured to focus beams of light individually on individual high contrast portions of the light modulator.

However, *Miyagaki* fails to teach or suggest similar subject matter.

Applicant respectfully notes that Claim 29 includes limitations related to the above described processing (or modulation) faces, and the lens array (but within in a modulation package). However, as also noted above, *Miyagaki* has neither multiple processing faces nor makes any distinction of high contrast portions of a microdisplay. Therefore, Applicant respectfully submits that Claim 29 cannot be anticipated by *Miyagaki*. Accordingly, Applicant respectfully submits that Claim 29 is patentable over *Miyagaki*.

New claims 32, 36, 42, and 45 relate to at least an optical device or a projector incorporating one or more aspect of the present invention not taught or

suggested by *Miyagaki*. Accordingly, Applicant respectfully submits that new Claims 32, 36, 42, and 45 are patentable over Miyagaki.

Based on the patentability of independent Claims 1, 6, 12, 22, 28, 29, 32, 36, 42, and 45, Applicant further respectfully submits that dependent Claims 2-5, 7, 8, 13-21, 23-27, 30, 31, 33-35, 37-41, 43, 44, and 46 are also patentable.

Consequently, no further issues are believed to be outstanding, and it is respectfully submitted that this case is in condition for allowance. An early and favorable action is respectfully requested.

Respectfully submitted,
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